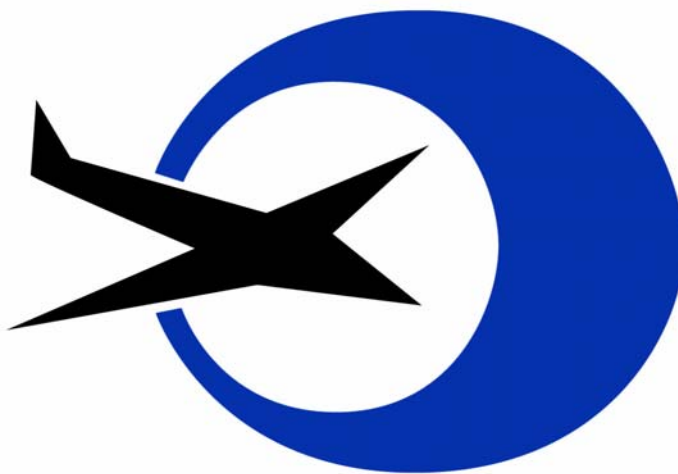




# ***Free Flight Status Report***



***October 2002***



# ***Free Flight Program Status Report***

## ***Introduction***

This status report provides an executive-level assessment of the programs managed within the Free Flight office. It focuses on significant topics reflective of current technical, schedule, cost and financial status.

The technical, schedule and financial data information presented in this report are as of October 31, 2002. Program financial data reflect the FY 2002 appropriation.

This report is designed to meet your needs. I am interested in your comments. Please direct comments to Anthony Willett, Free Flight Chief of Staff, at (202) 220-3300. His fax number is (202) 220-3312.

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John F. Thornton  
Director, Free Flight



# ***Free Flight Program Status Report***

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# ***Free Flight Program Status Report***

## ***Program Assessment Matrix***

Capability Name	Team Leader	Technical Status	Schedule Status	Financial Status
FREE FLIGHT PHASE 1				
Collaborative Decision Making	Daniel Horton	G	G	G
User Request Evaluation Tool	Tom Spellerberg	G	G	G
Traffic Management Advisor/ CTAS Terminal	Kelvin Streety	G	G	G

Reprioritization of program funding to accomplish the acceleration of the full deployment of URET to 20 centers has caused the Traffic Management Advisor Spiral 3 schedule to move to the right.

**NOTE: Assessment criteria are discussed in Appendix B-1**



# ***Free Flight Program Status Report Program Overview***

The Free Flight program continues development of new air traffic management functionality. It sustains and enables initiation of a replacement program for existing infrastructure with a system that will allow integration and implementation of this new air traffic management functionality.

Advanced traffic flow functions are being developed to support real-time information exchange essential to furthering the progress toward FAA/industry collaborative decision making and the economics associated with implementing the concept called "Free Flight."

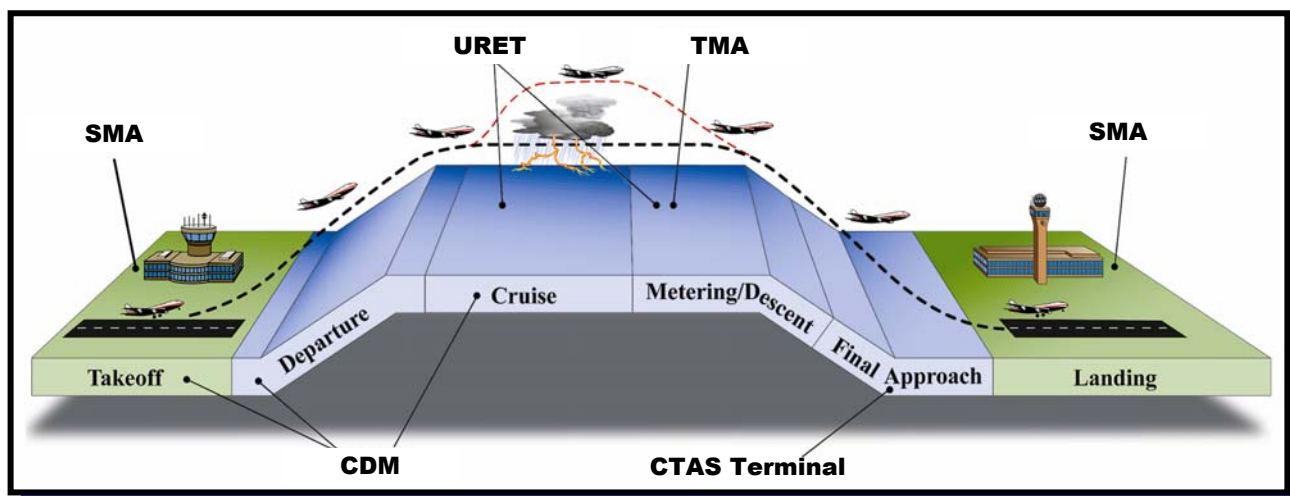
FFP1 is a subset of Free Flight designed to deploy five new core capabilities by the end of 2002. FFP2 builds on the success of FFP1 and will geographically expand deployment of URET and TMA. FFP2 will also address other mature capabilities (CPDLC and CRCT) and has an added research and development component consisting of 9 promising research projects.

Two of Free Flight Phase 1's core capabilities were completed ahead of schedule. The Surface Movement Advisor was completed ahead of schedule in December 1999. Collaborative Decision Making also was completed ahead of schedule on May 3, 2001. Traffic Management Advisor reached initial daily use of all seven planned sites on August 29, 2001. CTAS/Terminal cost vs. benefits evaluation has halted planned installations.



# Capabilities and Associated Flight Domains

- Taxi times
- Gate delay
- Average time flown from 40 nmi outside departure airport to 40 nmi outside arrival airport
- Flight time from 299 nmi range ring to meter fix
- Arrival delay (difference of planned time of arrival and actual time of arrival)
- Taxi times
- Gate delay



- Flight time (100 - 40 nmi from destination airport) during Ground Delay Program
- Average difference of planned time versus actual time (arrival time, departure time)
- Flight time from meter fix to runway threshold



# Collaborative Decision Making

*This element of Free Flight allows FAA traffic flow managers to work in near real-time with the airlines in responding to NAS congestion. These decision-support services will be introduced to the NAS as prototypes so that the FAA and users may test new functions in an operational context and provide feedback on their design and implementation.*

## Technical Status

Current  
Assessment



Previous  
Assessment

### Significant Accomplishments:

- The Initial Collaborative Routing component of CDM is complete. It enables traffic management specialists at the central Command Center, traffic management coordinators at high altitude centers, and airline operations centers conferencing with a shared view of real-time traffic flow situations. It also provides a way for users to display alternate routing around hazardous weather and airspace in special use.
- The Ground Delay Program Enhancements component of CDM is complete.
- The Runway Visual Range data availability program is complete. Runway Visual Range sensors provide visibility measurements for the touchdown, mid-point, and roll-out points on instrumented runways every two seconds. This information is being provided in a data table every minute to participating users.
- Runway Visual Range data is available from 47 airports to FAA traffic flow managers and CDM participating airlines. The data is available on the internet at <http://rvr.fly.faa.gov>
- The Free Flight Phase 1 Collaborative Decision Making Program is complete. Command Center data is available on the Internet at <http://www.fly.faa.gov>

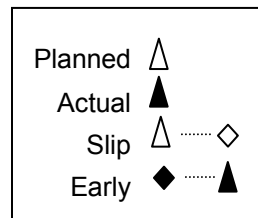


# Collaborative Decision Making Schedule Status

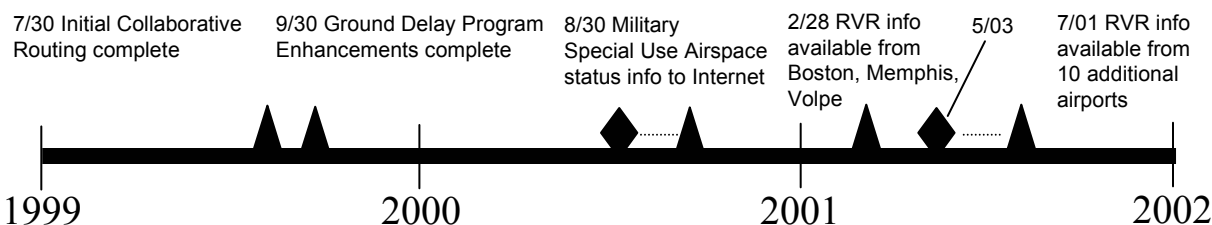
Current  
Assessment



Previous  
Assessment



## Schedule:



## Near-Term Schedule:

Airport Configuration Data including active runways for approach and departure, types of departures and approaches, and remarks on safety and capacity became available	August 30, 2000	Complete
Runway Visual Range (RVR) operational test and evaluation was conducted at the FAA Technical Center	January 30, 2001	Complete
RVR Quick Look Report, the preliminary test results from the operational test, became available	February 14, 2001	Complete
RVR information became available to users from Boston and Memphis airports	February 28, 2001	Complete
National Airspace Change Proposal permitted additional airports to provide RVR information	April 30, 2001	Complete
RVR information available from 10 additional airports	July 31, 2001 May 03, 2001 (early)	Complete





# User Request Evaluation Tool

*URET is a decision-support tool. URET provides radar assistant (D-side) controllers with a strategic planning aid that predicts aircraft conflict 20 minutes into the future. The tool predicts whether an aircraft will violate minimum separation requirements with another aircraft or airspace. The tool allows the D-side controller to assist the radar controller in eliminating potential conflicts before the situation requires tactical maneuvering. This will allow the controller to approve more pilot requests for shorter or more optimal routing. URET core capability limited deployment will be implemented at seven sites, including Indianapolis and Memphis.*

## Technical Status

Current  
Assessment



Previous  
Assessment

### Significant Accomplishments:

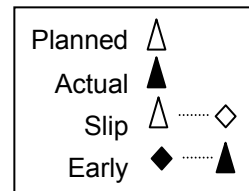
- Software build 1.6i2 was installed at Chicago, Memphis, and Indianapolis centers on October 14. The release provides updates for interfacility automation as well as continued fixes of problem reports and discrepancy reports to maintain system stability.



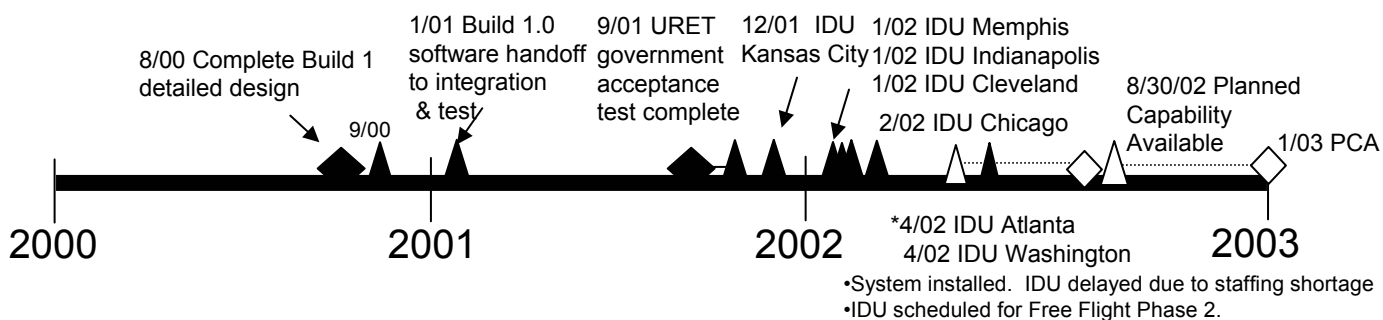
# User Request Evaluation Tool

## Schedule Status

Current Assessment **G** **G** Previous Assessment



### Schedule:



(Build 1.0 will provide all functionality identified by user team of air traffic controllers required for initial daily use.)

### Near-Term Schedule:

Kansas City installation and checkout completed	April 23, 2001	Complete (5 weeks early)
National Airspace System software (release A5f1.2) available for key site test. Release A5f1.2 is a software improvement that is necessary for URET to operate with the host computer	June 15, 2001	Complete
Kansas City Center Initial Daily Use	*December 3, 2001 *Delayed from 10/31 due to events of 9/11	Complete
Memphis Center Initial Daily Use	January 26, 2002	Complete
Indianapolis Center Initial Daily Use	January 27, 2002	Complete
Cleveland Center Initial Daily Use	January 30, 2002	Complete
Chicago Center Initial Daily Use	February 25, 2002	Complete
Washington Center Initial Daily Use	April 12, 2002	Complete (4 weeks early)
Atlanta Center Initial Daily Use (Rescheduled to FFP2)	April 23, 2002	Delayed due to staffing shortage



# ***Traffic Management Advisor / CTAS Terminal***

*Traffic Management Advisor helps en route and terminal controllers schedule aircraft. The CTAS Terminal tool provides an enhanced situational awareness at the TRACON. CTAS Terminal operates in conjunction with Traffic Management Advisor to provide an integrated traffic management system decision support tool suite. En route and terminal traffic management coordinators will use Traffic Management Advisor.*

## ***Technical Status***

Current  
Assessment



Previous  
Assessment

### **Significant Accomplishments:**

- All seven of the scheduled Traffic Management Advisor systems are now in daily use status.
- A Traffic Management Advisor national user team meeting was conducted on October 2. The national user team brings together a group of air controllers, technicians, and managers to discuss and solve problems and future happenings.
- The ARTS data interface operation functional verification was completed at Oakland Center and Northern California TRACON. This interface permits transfer of information between the Traffic Management Advisor and the Automated Radar Terminal System.

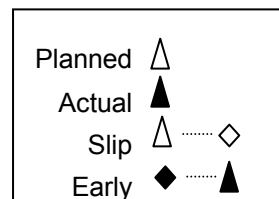


# Traffic Management Advisor / CTAS Terminal Schedule Status

Current  
Assessment



Previous  
Assessment



## Schedule:

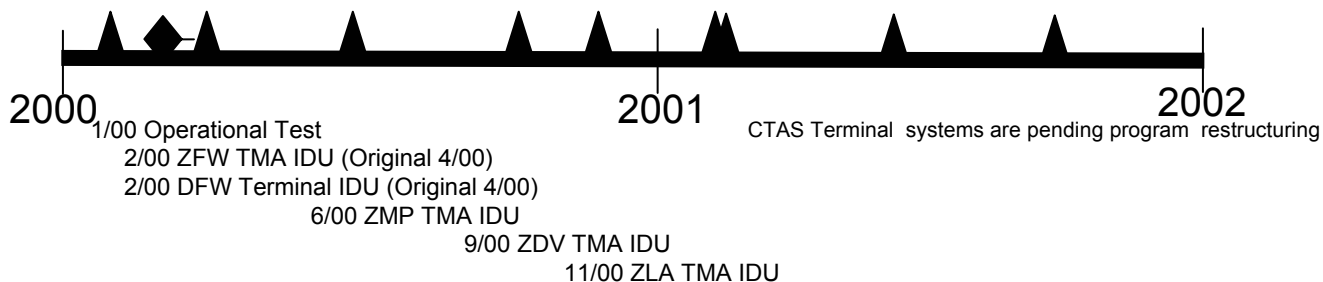
CTAS Terminal is listed as Terminal (previously pFAST)

2/01 ZTL TMA IDU

2/01 SCT Terminal IDU

5/01 ZMA TMA IDU

8/01 ZOA TMA IDU



## Near-Term Schedule:

Traffic Management Advisor achieved initial daily use at Los Angeles Center	November 21, 2000	Complete
TMA achieved "planned capability achieved" status at Minneapolis Center	December 20, 2000	Complete
Terminal began IDU at Southern California TRACON	February 9, 2001	Complete
Terminal begins IDU at Atlanta TRACON (A80)	On Hold	
TMA training for extended controller cadre at Miami Center	March 22, 2001	Complete
TMA achieves IDU at Miami Center	May 23, 2001	Complete
TMA achieves IDU at Oakland Center	August 29, 2001 (5 days early)	Complete
Software Spiral 3 complete	June, 2002 (Rescheduled due to funding reprioritization)	

October 2002



# ***Free Flight Phase 1***

## ***Program Financial Status***

### ***As of 09/30/02***

Current  
Assessment

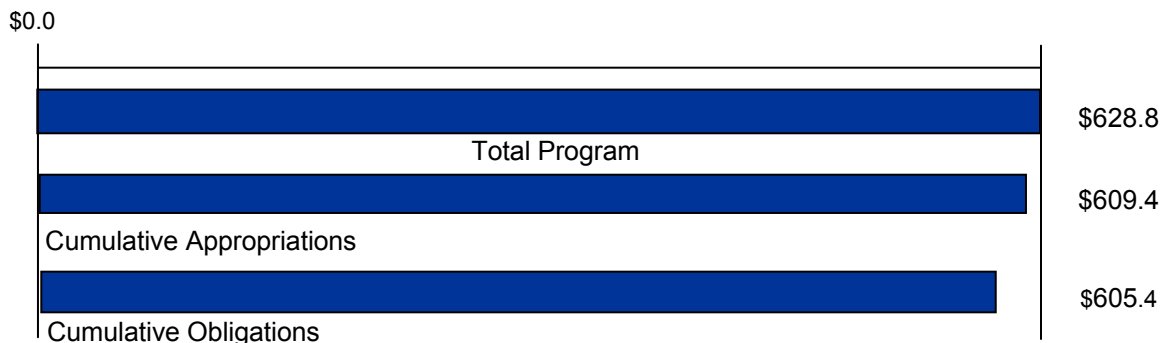


Previous  
Assessment

#### F&E Funding

Program: (FY98-FY02)	\$628.8
Prior Year Net Appropriations:	\$506.5
Fiscal Year ('02) Appropriations:	\$102.9
Prior Year Obligations:	\$505.3
Fiscal Year ('02) Obligations:	\$100.1
Unobligated Appropriations:	\$ 4.0

#### **Funding Profile: (\$M) (F&E)**



#### **Contract Cost Status:**

- Satisfactory. Due to transition of financial systems, additional obligations for October were not available at the time of report preparation. The implementation of the new DOT financial system (DELPHI) has been postponed. The November report will contain any significant obligations based upon Free Flight internal records.

#### **Program Funding:**

- The \$628.8M Free Flight Phase 1 five year (FY98–02) total is the program baseline presented to the JRC on 4/7/99.
- For FY01, \$0.5M originally allocated to the FFP1 CDM Program was provided to DSP (not part of the FFP1 baseline) as a result of Conference Report language and 0.22% was rescinded.
- In FY02 \$18.4M was deducted through reprogramming actions.



# APPENDICES



# ***Status Report Definitions***

## **Technical Status:**

***Significant Accomplishments:*** Significant technical tasks completed since the last report.

***Concerns and Ongoing Actions:*** Outstanding technical concerns, which must be resolved to assure successful accomplishment of technical project objectives and the actions being taken to resolve them, and discussion of other technical activities.

## **Schedule Status:**

***Major Milestone Accomplishment:*** Listing of the Level I and Level II milestones completed during the past reporting period. (Sixty managed milestones have been established. Level I = 10 most significant. Level II = remaining 50 managed milestones.)

***Concerns and Ongoing Actions:*** Discussion of current and potential schedule impacts resulting from schedule slippage and the actions taken to develop work-arounds or recovery plans, and other schedule related activities.

## **Financial Status:**

***Contract Cost Status:*** Assessment of cost performance status as to the executability of the program within approved resources.

***Program Funding:*** Assessment of the overall adequacy and availability of programmed and budgeted funds.

***Concerns and Ongoing Actions:*** Discussion of current or potential impacts to the cost baseline or estimates to complete, arising from contractor performance and the actions being taken to mitigate them; impacts of funding shortfalls, reductions, or non-availability due to Congressional or DOT decisions and the actions being taken to resolve or mitigate them; and other financial related activities.



# Assessment Criteria

## Technical Status:

**Red:** Technical problems will cause the system-level performance to fall below the defined *threshold* value established for any *critical* parameter in the operational requirements documents (ORD).

**Yellow:** Technical problems will cause the system-level performance to fall below the defined threshold *objective* value for any *critical* parameter in the ORD.

**Green:** No technical problems exist causing system-level performance to fall below defined *objective* performance values established for all *critical* parameters in the ORD.

## Schedule Status:

<b>Red:</b>	Level I Milestone	(next 6 months)	>	15 working days late
		(6-12 months)	>	30 working days late
		(beyond 12 mo.)	>	60 working days late
<b>Yellow:</b>	Level I Milestone	(next 6 months)	>	6 working days late
	Level II Milestone	(next 6 months)	>	15 working days late
		(6-12 months)	>	30 working days late
		(beyond 12 mo.)	>	60 working days late

**Green:** Level I and II Milestones are on schedule within the criteria listed above.

## Financial Status:

**Red:** Total approved program is insufficient to cover the full scope of the project development and implementation, or Government's projection of contractor's estimate-at-completion *will* exceed contractor's total allocated budget.

**Yellow:** Current year project needs do not match available project dollars and may require current year reprogramming, or Government's projection of Contractor's estimate-at-completion *may* exceed contractor's total allocated budget.

**Green:** Funding authorizations meet the program requirements, and contractor's total allocated budget is adequate to meet project requirements.





# ***Acronyms and Abbreviations***

A80	Atlanta TRACON	pFAST	Passive Final Approach Spacing Tool
CDM	Collaborative Decision Making	RVR	Runway Visual Range
CPDLC	Controller-Pilot Data Link Communications	SCT	Southern California TRACON
CRCT	Collaborative Routing Coordination Tool	SMA	Surface Movement Advisor
CTAS	Center/TRACON Automation System	TMA	Traffic Management Advisor
DFW	Dallas Fort Worth	TRACON	Terminal Radar Approach Control
DOT	Department of Transportation	URET	User Request Evaluation Tool
DSP	Departure Sequencing Program	WARP	Weather and Radar Processor
F&E	Facilities and Equipment	ZDV	Denver ARTCC
FFP1	Free Flight Phase One	ZFW	Fort Worth ARTCC
FFP2	Free Flight Phase Two	ZLA	Los Angeles ARTCC
FY	Fiscal Year	ZMA	Miami ARTCC
IDU	Initial Daily Use	ZMP	Minneapolis ARTCC
JRC	Joint Resources Council	ZOA	Oakland ARTCC
NAS	National Airspace System	ZTL	Atlanta ARTCC
PCA	Planned Capability Achieved		